T3000 controller is a multi-user, including T3-BB, T3-LB and T3-TB.It can stand DDC panel alone or in a multiple network system with full communication capabilities. The multiple communication ports allow the controller to operate on a network or host sub networks and to communicate with local and remote operators simultaneously.

Setup and programming are done on a PC not necessary to connect to live hardware as it is the case with many systems. When the program is ready for on-site testing, connect it to a live panel and download the T3000 software. Programming can be done remotely over the network and modem connections as well. The network system is very flexible and economical for the installation.



T3-BB



Specifications	
Industry standard	Bacnet & Modbus protocols
Control Basic programs	16
User screen displays	16
Schedule&holiday	8 Weekly routines, 4 annual routines
User variables	128
PID Controllers	16
Passwords or users	8
RS485 Sub baudrates	9600 thru to 115k
RS485 main baudrates	1200~921600
Main CPU capacity	512K Flash / 512k Ram
Highly Configurable	any combination of input/output cards totalling up to 64 points
Digital output	5V/125VAC, 30DVC
Analog output	0-10V
Universal input	Thermistor, 0-10V, 0-5V, 0-20mA
Mechanical relays	2A, 24VAC/DC
Diagnostic LEDS	Hand-Off-Auto Switches
SD Disk slot	Trend logs, alarms, graphics
Ethernet Port	Bacnet & Modbus supported simultaneously
RS485 Ports	2
USB Port	T3-BB, T3-LB
RS232 Port	ТЗ-ВВ
Hardware Options	Several optional modules are available to support Zigbee ,Wifi, 1k Pt sensor inputs.
Wifi Security	WEP/WPA-PSK/WPA2-PSK
Operating Temperature	-30~70°C (-22~158°F)
Maximum Power Consumption	T3-BB:10W T3-LB:10W T3-TB:6W
Case Color	Black

• Surge-protected Universal Inputs with 12-bit resolution

• UL listed ABS enclosure with rubberized texture creates a high end feel.

• Software configure the I/O ranges with the free T3000 software or by writing to the registers with your own software.

- Each output has a hand-off-auto switch for easy troubleshooting and overrides.
- Each I/O as well as the RS485 connections have a separate screw terminal, there's no need to gang two wires under one terminal for any of the terminations.
- High/Low speed input pulse counters

• Communication methods are RS485, Ethernet, USB, Zigbee but it can, at the same time, support Modbus and Bacnet.

- Starter space source code is avaliable.
- T3000 front end is free and open source: http://tinyurl.com/n7kkqp6
- Compiled version of the front end is here: https://tinyurl.com/y7uyu9n3
- Interactive dynamic color graphics: https://temcocontrols.com/ftp/
- · User programming, built in networking features

### **Part Number Scheme**



### **Network Diagram**



#### **Dimensions** 2) T3-LB(Little Brother) 2) T3-TB(Little Brother) 1) T3-BB(Big Brother) 2.0in (50mm) 5.6in (142mm) 4.8in (122mm) 2.0in (50mm) 5.6in (142mm) 3.6in (92mm) 8.78in (223mm) 9.7in (246mm) 9999999999 5.6in (141mm) 6.1in (155mm) 2.0in (50mm) 5.4in (137mm)

Wiring Diagram









#### **T3-BB WIRING DIAGRAM**



**Rs485 SUBNET NETWORK** 

$\searrow$			Controller		
	T3-BB	T3-LB	T3-TB	T3-TB-11i	T3-Nano
	Big Brother	Little Brother	Tiny Brother	Tiny Brother	
Total Channels:	56	26	22	22	/
Universal Input	32	16	8	11	/
Analog Output	12	4	6	5	/
Relay Output	12	6	8	6	/
Conn Port:					
RS485	2	2	2	2	2
RS232	1	0	0	0	0
Enthernet	1	1	1	1	1
USB	1	1	0	0	0
Option Port**	1	1	0	0	0

Transportation methods of these units are RS485, Ethernet, USB, Zigbee ,at the same time, they support Modbus and Bacnet. The T3-BB unit features 32 channels input and 24 channels output including 12 channels analog output and 12 channels digital output. As for the T3-LB, there are 16 channels input and 10 channels output including 4 channels analog output and 6 channels digital output. For T3-TB, it includes 8 inputs and 14 outputs which contain 6 analog outputs, 8 digital outputs. All of these channels can be controlled directly by minipanel through input and output cards.

### Highlight



### **T3000 Operation Instructions**

3.Click to select minipanel

1. Visit https://tinyurl.com/y7uyu9n3, download 09T3000 software.zip and install it;

2. Take an example of T3-BB here, connect T3-BB to PC by RS485 network at pin 94, 95, and 96 or Ethernet.

3. Open T3000 software, and click icon building, an popup window will appear, set protocol to Auto, then close it. Click scan icon which is next to the icon building to find the connected unit.

8			uilding Automat	tion System 2016.03.18	3				- = :
<u>File Iool View Database Control Miscellaneous</u>	Help								
<b>≜</b> ∎⊳ ©⇒ ₽ ⊂ ♥		<b>.</b>							
Building View	# × [								
🖃 📲 Local Network	Building Config	ration							
CHAMBER_REV1		D. datase	Destand	ID (Demain / Tel#	TD Dark	COM Deat	Paul Data		p. 4
2883884	Selected	Building	Protocol	IP / Domain / Tel#	IP Port	COMPort	Baud Rate	Database\Ruildings	Default Building/Default Building mdb
di MiniPanel	Selected	Derault_Durung	Auto	19/8	N/A	N/A	N/A	Database (pullul igs	peraut_building (peraut_building.mub
			13						
MiniPanel:05009-1-192.108.0.14									
MiniPanel:90028-1-192.168.0.54									
II MiniDanal-01017_254_102 168 0 2									
F T3000 Building Automation System 2016.10.21 File Tools View Database Control Miscellaneous Help File Tools View Database Control Miscellaneous Help	M ()								
uilding View 👻 🕈 🗙	IP Address			Time					
	🔘 Obtain	IP Address Automatically		2016/10/26	SVNC Local PC	. E	Load Factory De	fault	
	<ul> <li>Use The</li> </ul>	Following IP Address		2010/10/20	Since cocarre		courr actory at		
	IP Address	s: 192 . 168 .	0.112	15:12	Refresh Time				
						(	Clean Device Dat	abase	¥
	Subnet Ma	scan Result		C to the set	the second				
	Gateway	Address : SCAN R	ESULT:						
	Panel Num	iber :	Model	Building Floor Room	Sub net S	erial# Add	iress Po	rt Protocol	
		B/LB/TE BB/LB/T	196884-254-192.168.0 B:92294-1-192.168.0	fault_Buildi floor1 room1 fault_Buildi floor1 room1	fault_Buildi 9	2294 192.16	8.0.112 50	2 TCP/IP	
	Panel Nam	e: BB/LB/1	B:90023-1-192.168.0	fault_Buildi floor1 room1	fault_Buildi 9	0023 192.16	8.0.15 50	2 TCP/IP	
	Port ·	Stat8:97	150-249-192.168.0.9	rauit_suildi floor1 room1	rault_Buildi 9	/150 192.16	8.0.97 50	Z TCP/IP	
	Port.								

Then click the device log what have been connected, T3000 software will show the info in righ hand place. You can click Input, Output and other icon.

s View Database Control Miscellaneous H	elp											
	<u>~</u>	)	<b>Ö</b> Q									
	×			HIRP					_			
efault_Building	Input	Panel	Full Label	Auto/Manual	Value	Units	Range	Calibration	Sign	Filter	Status	Jumper
	IN1	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor Dr
Local Network	IN2	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
BTUMet	IN3	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN4	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
CHAMBER	IN5	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN6	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
Humdity	IN7	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN8	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
HUMSENSOR	IN9	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
COOPZIG_TEST	IN10	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
mininanel	IN11	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN12	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
POWER_METER	IN13	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN14	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
	IN15	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
	IN16	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
TSTAT8	IN17	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
VIII TOP	IN18	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN19	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
Serial Port	IN20	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN21	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	÷	0	Open	Themistor D
	IN22	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
T3-PT12:25254	IN23	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN24	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Themistor D
	IN25	1		Auto	-40.00	Deg.C	10K -40 to 120	0.0	-	0	Open	Thermistor D
	IN26	1		Auto	-40.00	Deg C	10K -40 to 120	0.0	1	0	Open	Themistor D

4. Click input icon, it will show all inputs in T3000 software.

		,									
Counter Type	T3- BB	T3- LB	T3- TB	T3- OEM	T3-TB -11i	T3E- 6CT	T3E- PT12	T3E- 22i	T3E- 886	Min-Pluse Width	Max Freq
Low Speed	All 32 Inputs	All 16 Inputs	All 8 Inputs	All 8 Inputs	All 11 Inputs	All 11 Inputs	None	All 22 Inputs	All 8 Inputs	0.5S	1Hz
High Speed	In27- 32	In11- 16	None	In9-12	None	None	None	In1-11	None	0.01S	1k Hz

For T3-BB, T3-LB, T3-TB, all the inputs channels have pulse counters. High speed counters capable

Here we take an example of T3-BB, showing how to configure the high speed and low speed counters in T3000 software.



5. Click output icon, it will show the output view.

T3000 Building Automation System 2016.10.21	the strength in	- 1 Mil	Arr. 101 - 10	E.c.							
File Tools View Database Control Miscellaneo	us Help										
<b>▲ -1 → 6 → - 7 </b>	🗮 🖾 🕥	<b>.</b>									
uilding View	▼ # ×										
💷 🖧 Default_Building	Output	Panel Full Label	Auto/Manual	HOA Switch	Value	Units	Range	PWM Period	Status	Label	
	OUT1	1	Auto	MAN-ON	On		Off/On		ОК		
	OUT2	1	Auto	MAN-ON	On		Off/On		OK		
BTUMet	OUT3	1	Auto	MAN-ON	On		Off/On	0	OK		1
	OUT4	1	Auto	MAN-ON	On		Off/On		OK		
	OUTS	1	Auto	MAN-ON	On		Off/On	0	OK		
	OUT6	1	Auto	MAN-ON	On		Off/On		OK		
	OUT7	1	Auto	MAN-ON	On		Off/On	0	OK		
HUMSENSOR	OUT8	1	Auto	MAN-ON	On		Off/On		OK		
	OUT9	1	Auto	MAN-ON	On		Off/On	0	OK		
COOPZIG_TEST	OUT10	1	Auto	MAN-ON	On		Off/On		OK		
in minipanel	OUT11	1	Auto	MAN-ON	On		Off/On		OK		
	OUT12	1	Auto	MAN-ON	On		Off/On		OK		
POWER_METER	OUT13	1	Auto	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
TSTAT8	OUT14	1	Auto	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
	OUT15	1	Auto	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
	OUT16	1	Auto	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
TSTAT8	OUT17	1	Manual	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
ТЗВВ	OUT18	1	Manual	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
	OUT19	1	Auto	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
Serial Port	OUT20	1	Manual	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
🖮 📲 Сотб	OUT21	1	Manual	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
×10% T2-DT12-25-254	OUT22	1	Manual	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
13-P 112.23234	OUT23	1	Manual	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
	OUT24	1	Manual	MAN-ON	10.00	Volts	0.0 -> 10	0	OK		
	OUT25	1	Auto	AUTO	0.00		Unused		-		_
	OUT26	1	Auto	AUTO	0.00		Unused		-		
	OUT27	1	Auto	AUTO	0.00		Unused		-		
	OUT28	1	Auto	AUTO	0.00		Unused		-		
	OUT29	1	Auto	AUTO	0.00		Unused		-		_
	OUT30	1	Auto	AUTO	0.00		Unused		-		
	OUT31	1	Auto	AUTO	0.00		Unused		-		

\*6.Steps to get zigbee information by T3000.



			_	_		_				_		_
	1	5	7	8	21	22	23	24	33	174	254	ID
1	Х	-53	-62	X	Х	-22	-94	Х	Х	X	-11	174
5	-64	X	-51	-49	-64	X	-64	Х	X	X	-64	254
7	-26	-69	X	-38	-89	Х	-86	х	Х	Х	-61	33
в	-10	-53	-37	X	-82	-84	-73	х	X	X	-51	24
21	x	X	Х	X	X	Х	Х	Х	Х	Х	X	23
22	x	X	X	X	X	X	X	X	X	X	X	22
23	х	X	X	X	X	Х	Х	Х	Х	Х	X	21
24	x	X	X	X	Х	х	х	х	Х	Х	X	8
33	х	X	X	X	X	х	X	Х	Х	Х	X	7
174	х	X	X	X	X	Х	Х	Х	Х	Х	X	5
254	-52	-85	-54	-52	-91	-83	-74	-47	-80	Х	-1	1

It shows the information details

To read the zigbee signal for the T3 controller, read registers 5030 thru 5099. 5031~5099 are ID and signal strength, high byte is ID, low byte is signal strength. Register 5030 holds the number of neighbors the controller can see, let's say there are three thermostats near the T3 controller so N=3.

Resgister 5031 holds the Modbus ID and signal strength of the first neighor, high byte is ID, low byte is signal strength.

Resgister 5032 holds the Modbus ID and signal strength of the second neighor, high byte is ID, low byte is signal strength.

Resgister 5033 holds the Modbus ID and signal strength of the third neighor, high byte is ID, low byte is signal strength.

.....

To read the signal strength for any of the thermostats.the same applies but the table starts at register 51, this holds the number of neighbors for the thermostat. Let's use N=3 again.Register 52 thru 54 holds the Modbus ID of the three neighbors. Register 55 thru 57 holds the signal strength of the three neighbors.

\*You can also get the detail information using Temco Modbus Poll tool.



Eila	Edit Con		Satun Euro	tions Dis			05 06 <b>15</b>
Mo Mo	odbusPoll1		Setup Tune			ew winde	
Mode	el Name	:	Read/Write	e Definitio	n	1	X
Conr	ected		Slave ID:	255	1		ОК
De	scription	Address	Function:	03 Read H	olding Reg	jisters(4x)	▼ Cancel
0		0	Address:	299	-		Curreer
1		1					
2		2	Quantity:	10			Apply
3		3	Scan Rate:	1000			Read/Write Once
4		4	View				
5		5	Rows	© 20 (	50 🤇	) 100 🔘 Fi	t to Quantity
6		6	Display				
7		7	Unsign	ed		- EH	de Alias Columns
							uuress in ceil

ID 255 means reading zigbee BB itself. Address 299 indicates how many units are connecting For this test, there are 3 units connecting:

reg300: ID + 256 of unit 1, the highest bit set to 1 means that device is online, if it is off line, reg300 = ID = 18

It's the same for reg301 and 302 and so on.

Description	Address	Value
TOTAL NO	299	3
SUBADOR F	300	274
SUBADOR L	301	265
SUBADOR L	302	262
SUBADOR L	303	0
SUBADOR L	304	0
SUBADOR L	305	0
SUBADOR L	306	0
SUBADOR L	307	0
SUBADOR L	308	0

For debugging:

1. First make sure the zigbee unit is connected to the zigbee network, when it is connected you can see the red led keeps on, otherwise it will be flashing.

- 2. In these two situations you can try to re-power the zigbee BB
- A. If you wait for a long time the zigbee BB cannot find the units
- B. If you find the units by T3000,but when you click the unit icon you can not access them.
- 3. Using modbus poll to access each of the unit



### \*Port Forwarding

Following are steps for port forwarding:

Step1. Set port forward for router:TCP 502(modbus TCP);UDP 47808(Bacnet port); UDP 1234(Temco private scan).

Step2.Click to show the tab as below,select "Remote Device" protocol.

😈 T3000 Building Auto	mation System 2017.5.31	_						88	Land Mar	og State		
File Tools View	Database Control Miscellaneous	Help										
001			0	- - - - - - - - - - - - - -								
Building View	<b>▼</b> # ×	SCH	EDULE									
E 👬 Default_	Building	NUM	Full L	abel	Auto/Manual	Output	Holiday 1	State1 H	ioliday2 s	state2 L	abel	
e 📥 L	ocal Network	1	WOR	¢	Manual	ON		OFF	C	FF		
	BTUMeter	2	LUNC	H	Manual	ON		OFF	C	FF		
	BTU Meter:103288-253-	3	SLEEP		Manual	ON		OFF	C	FF		
		4			Manual	ON		OFF	C	FF		
	BIUMeter	5		Duilding Conf	Manual	<u></u>		OFF		FF		X
	× 🛒 FlowMate			Building Confi	gration							
	× 📕 FlowMate	8			Building	Protocol	IF	P/Domain/Tel#/SerialNum.	IP Port	COM Port	Baud Rate	Build
	× 🗾 FlowMate			Selected	Default_Building	Remote Devic	e 🚽 19	92.168.0.3	10000	N/A	N/A	Database\Buildings\Default_Building\Default_Building.db
	TStat8:103291-253-192.:					Modbus 485						
	TStat8-SN99885					Modbus TCP Bacnet MSTP						
×	CHAMBER					Remote Devic	e					
	× 📕 Humdity		-			Hato						

Step3.It will show the tab as below, click to fill outer net IP or domain name.

		FIOLOCOL	IP/Domain/Tel#/SerialNum	IP Port	COM Port	Baud Rate	Bu
De	efault_Building	Auto	N/A	N/A	N/A	N/A	Database\Buildings\Default_Building\Default_Building.db
elected aa	aa	Remote Device	180.158.38.31	502	N/A	N/A	Database \Buildings \aaa \aaa.db

Step4.Scan via T3000 software, the remote device can be connected.

F3000 Scanning		-	-		X
Exit	Jease wait.			$\sim$	
Scanning Mode	Skip	Status	Reply	Notes	
Ethernet Scan	No	Finished	0	Network scan finished.	
Remote IP Device	No	Running	1	Found remote device.	



### \* Adding Custom Devices

Only Temco's device can be discovered by T3-BB serial controller automatically, so we have to add custom device manually. Following are the steps to add custom devices:

U 13000 Build	ling Automa	ition System 2017.5.31	
File Tools	View Data	base Control Miscellaneous Help	
1 2	<u> </u>	Building Config Database 🛛 🖓 💿 🖳 🌞 🔾	
Building View		All Nodes a × Harden and	
ه 💑 ۵	Default	IONameConfig	
		User Account	

Sep2.If the customer would like to add a device in sub RS485 port, the protocol is Modbus/TCP to Modbus/RS485, we need to confirm which RS485 port to select; If custom device is on RS485 SUB PORT, you need to confirm which port from the three sub net ports current device is on. Then add a new name and ID for the custom device, and you can find the serial number is generated by T3000.

RS485 SUB ;	Modbus Master 👻	19200 -
Zigbee :	Unused 👻	19200 👻
RS485 Main:	Modbus Slave 👻	19200 🔻
USB Port :	() Com port	C GSM

			A	dd	Delete	Del Al	Delete Offli	ne Exit	Add C	Sustom Device			
	Main Build	Sub Net	Serial ID	Floor	Room	Product Nam	Add your own (	device		x	IP /Baud Rate	Graphic Name	HardW Ver
1	Default_Bu	Default_Bu	103916	floor1	room1	T3-BB/LB/TB	Add your office	actice			192.168.0.3	T3000_Default_Building_P	() ()
2	Default_Bu	Default_Bu	104170	floor1	room1	T3-BB/LB/TB	a national de	S. 1. 1. 1. 1. 1.			192.168.0.33	T3000_Default_Building_P	
3	Default_Bu	Default_Bu	103718	floor1	room1	T3_6CTA	Network de	vice			192.168.0.205	T3000_Default_Building_P	102
4	Default_Bu	Default_Bu	102629	floor1	room1	T3_6CTA	197 16	58 <b>0</b> 33		horo aro 2 c	are 3 sub net port, m which port current	1000_Default_Building_P	102
5	Default_Bu	Default_Bu	65834	floor1	room1	TSTAT8	IP: 152 . IC			nele ale J S		00_Default_Building_P	2
6	Default_Bu	Default_Bu	92294	floor1	room1	temcopanel			(	confirm which		00_Default_Building_P	2
7	Default_Bu	Default_Bu	92661	floor1	room1	BTUMeter	Port: 502			device is on		00_Default_Building_P	2
8	Default_Bu	Default_Bu	102643	floor1	room1	LBARM	T2 PD Cam Dect	(		Non-			
9	Default_Bu	Default_Bu	90023	floor1	room1	VFDExample	13-00 COM PORC	RS485 SUI	<b>*</b> ] 🗇		192.168.0.15	T3000_Default_Building_P	
10	Default_Bu	Default_Bu	103288	floor1	room1	BTU_Meter:1					192.168.0.140	T3000_Default_Building_P	2
1	Default_Bu	Default_Bu	99885	floor1	room1	TStat8:99885					192.168.0.140	T3000_Default_Building_P	2
12	Default_Bu	Default_Bu	103345	floor1	room1	Humdity					192.168.0.34	T3000_Default_Building_P	
13	Default_Bu	Default_Bu	65538	floor1	room1	T8_245	Com port				192.168.0.97	T3000_Default_Building_P	2
							Comport: CO	200	•]				
							Product Name:	Add New 🔻	TEST_NAM	E name	customer	device	
					( 1)		Product Type ID:	222	2				hanna -
		T3000	, dont n	hind it	ierated b	y	Modbus ID :	2		custo	omer device	e id	
							Serial Number	16162					
						and the second	Connect		Cancel				

Step3.The custom device will appear in the tree node as below.



Step4. Choose Control->Program,then we can make a program to read and write custom device's register.

😈 T3000 Building Automat	tion System	n 2017.5.31				
File Tools View Dat	tabase Co	ontrol Miscellaneo	us Help			
1 D G 6		Graphics	(Alt - G)			
Building View	1	Programs	(Alt - P)	í		
U T3000 Building Automation System 2017.8.18						
File Tools View Database Control Miscellaneous Help						
日 約 (5 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇 〇	<u>ш</u> .	Q 🔳				
Building View B X	PROGRA	AM				
B 🔓 Default_Building	Program	Full Label	Status	Auto/Manual	Size	Run Statu:
		CUSTOMER DEVICE	ON	Auto	0	Normal
BI UMeter			ON	Auto	0	Normal
BTU_Meter:103288-253-192.168.0.140	4		ON	Auto	Ő	Normal
TStat8:99885-253-192.168.0.140	Panel : 1	Program : 1 Name	: PRG1	- Carlos - C		Sectore:
	Send (F2	) Clear (F3) Load File	(F7) Save File (F6)	Refresh (F8)	Settings	
T3 6CTA						
× 13 6CTA	20 V/		IR DEVICE			
	10 RF	M WRITE CUSTOF				
13-BB/LB/1B(ARM):103910-1-192.108.0.3	20 1 2	2  MB REG6 = 100	MIT DE VIOE			
T5-B5/LB/TB(ARM):104170-1-192.168.0.33						

Step5. Click "Network Point table" to check whether the remote points reading is ok.

U T30	00 Building	Automation Sy	stem 201	7.5.31		
File	Tools Vie	w Database	Control	Miscellaneous Help		
	Ð	÷ 🕥 =	-	o 🛇 🚞 M	19 🗐	
Buildin				🗕 🕁 🗡		Network Points[ Alt-N ]
	– Pefa	ult_Building				Network points from other nodes used by the controller

### \* Network and remote points support

T3-serial controller (only new ARM) can support network points and remote points.

### 1.Network points function

For example, there are panel 1 and 2 in network. We can use 2.2.VARx 2.2.OUTx 2.2.Inx to read or write the network ponts. Range of x is 1 to 255.

### 2.Remote Bacnet points

For example, panel 1 is T3000 controller, device 3 is MSTP slave device, which is integrated in only master RS485 port, and this port is set to master MSTP function. We can use 1.3. AVx 1.3. Aix 1.3. DOx 1.3. AOx to read and write remote bacnet points. Range of x is 1 to 255.

### 3.Remote Modbus points

For example,panel 2 is controller, device 4 is Modbus slave device, which is integrated in master or slave RS485 port, and this port is set to master modbus function.We can use 2.4.MB\_REGx or 2.4.REGx to read and write remote modbus points. MB\_REG is base 0, and REG is base1.Range of x is 0 to 2047.

### 4.Local points

INx (x: 1 - 64), OUTx (x: 1 - 64), VARx (x: 1 - 128), PRGx (x: 1 - 16), GRPx (x: 1 - 16), SCHx (x: 1 - 8), HOLx (x: 1 - 4), PIDx (x: 1 - 16).



Register	Register List								
Address	R/W	Length	Description						
0~3	R	4	Reserved for serial numblert						
4~5	R	2	firmware Version Number						
6	R/W	1	Modbus device address						
7	R	1	Prodouct model						
8	R	1	Hardware Version Number						
9	R	1	PIC rev						
12	R	1	UART0 Baudrate. 5 - 9600 , 6 - 19200						
14	R	1	ISP Version						
18	R/W	1	UART1 Baudrate. 5 - 9600 , 6 - 19200						
19	R/W	1	UART2 Baudrate.(UART_1200 = 0, UART_2400 = 1, UART_3600 = 2, UART_4800 = 3, UART_7200 = 4, UART_9600 = 5, UART_19200 = 6, UART_38400 = 7, UART_57600 = 8, UART_115200 = 9, UART_921600 = 10						
33	N	1	test cmd, write 77 - reboot, 100 - set default paramer, 111 - erase prg, 150 - clear tstat db						
34	R	1	board type, big or small. 1 - big , 2 - samll,3-tiny,4-vav						
35	R	1	instance number						
36	R	1	station number						
39	R/W	1	EN clear tstat db						
42	R/W	1	USB MODE						
43	R/W	1	EN DYNDNS ,// 0 - no 1 - disable 2 - enable						
44	R/W	1	DYNDNS provider, // 0- www.3322.org 1-www.dyndns.com 2 - www.no- ip.com						
45	R/W	1	dyndns update timer						
46	R/W	1	NETWORK: MSB, MSB-1						
47	R/W	1	MSTP NETWORK: MSB, MSB-1						
51	R	1	TOP hardware						
52	R	1	c8051f023 firmware rev						
53	R	1	sm5964 firmware rev						

\*The register list is very long ,it can be downloaded as an excel spreadsheet (03ModbusBacnetRegisterList.xls) at the following link:<u>http://tinyurl.com/ybaj9d3u</u>

## 1K PT Sensor Accuracy Table:

ACTUAL	RTD ACCURACY +/- °C PT100Ω ALPHA0.003850 to DIN 43760 IEC751 DIN EN 60 751							
	B GRADE	A GRADE	BAND 3(1/3 DIN)	BAND 5(1/10 DIN)				
<b>-200</b> ℃	<b>1.30</b> ℃	<b>0.55</b> ℃	0.39 °C	0.38 ℃				
<b>-150</b> ℃	<b>1.05</b> ℃	<b>0.45</b> ℃	<b>0.23</b> ℃	<b>0.21</b> ℃				
<b>-100</b> ℃	0.80 °C	0.35 ℃	0.15 ℃	0.12 ℃				
<b>-90</b> °C	<b>0.75</b> ℃	<b>0.33</b> ℃	<b>0.14</b> ℃	0.10 ℃				
<b>-80</b> °C	<b>0.70</b> ℃	0.31 ℃	<b>0.13</b> ℃	0.09 °C				
<b>-70</b> ℃	<b>0.65</b> ℃	<b>0.29</b> ℃	<b>0.12</b> ℃	0.08 °C				
<b>-60</b> °C	0.60 °C	<b>0.27</b> ℃	<b>0.11</b> ℃	0.07 °C				
<b>-50</b> ℃	<b>0.55</b> ℃	<b>0.25</b> ℃	0.10 ℃	0.06 °C				
<b>-40</b> °C	<b>0.50</b> ℃	<b>0.23</b> ℃	<b>0.10</b> ℃	<b>0.06</b> ℃				
<b>-30</b> ℃	<b>0.45</b> ℃	<b>0.21</b> ℃	0.09 °C	0.05 ℃				
<b>-20</b> ℃	0.40 °C	0.19 ℃	0.09 °C	0.04 °C				
<b>-10</b> ℃	<b>0.37</b> ℃	0.17 ℃	0.08 °C	0.03 ℃				
0 °C	0.30 °C	0.15 ℃	0.08 °C	0.03 °C				
<b>10</b> ℃	<b>0.35</b> ℃	<b>0.17</b> ℃	0.09 °C	0.04 °C				
<b>20</b> ℃	0.40 °C	0.19 ℃	<b>0.10</b> ℃	0.04 °C				
<b>30</b> ℃	<b>0.45</b> ℃	<b>0.21</b> ℃	<b>0.11</b> ℃	0.05 ℃				
<b>40</b> ℃	<b>0.50</b> ℃	<b>0.23</b> ℃	<b>0.12</b> ℃	0.06 °C				
<b>50</b> °C	<b>0.55</b> ℃	<b>0.25</b> ℃	<b>0.13</b> ℃	0.07 °C				
<b>60</b> ℃	<b>0.60</b> ℃	<b>0.27</b> ℃	<b>0.14</b> ℃	0.08 °C				
<b>70</b> ℃	<b>0.65</b> ℃	<b>0.29</b> ℃	<b>0.16</b> ℃	0.09 °C				
<b>30 ℃</b>	0.70 ℃	0.31 ℃	<b>0.17</b> ℃	0.10 ℃				
<b>90</b> °C	0.75 ℃	0.33 ℃	<b>0.18</b> ℃	0.11 ℃				
<b>100</b> ℃	<b>0.80</b> ℃	<b>0.35</b> ℃	0.19 ℃	0.12 ℃				
<b>110</b> ℃	<b>0.85</b> ℃	<b>0.37</b> ℃	<b>0.20</b> ℃	0.13 ℃				
<b>120</b> ℃	0.90 ℃	0.39 ℃	<b>0.21</b> ℃	0.14 ℃				
<b>130</b> ℃	<b>0.95</b> ℃	<b>0.41</b> ℃	<b>0.22</b> ℃	0.15 ℃				
<b>140</b> ℃	1.00 ℃	<b>0.43</b> ℃	<b>0.24</b> ℃	0.15 ℃				
<b>150</b> ℃	1.05 ℃	0.45 ℃	<b>0.25</b> ℃	0.16 ℃				
<b>160</b> ℃	1.10 ℃	<b>0.47</b> ℃	<b>0.26</b> ℃	0.17 ℃				
<b>170</b> ℃	1.15 ℃	0.49 ℃	<b>0.27</b> ℃	0.18 ℃				
<b>180</b> ℃	<b>1.20 ℃</b>	0.51 ℃	0.29 °C	0.19 ℃				
<b>190</b> ℃	<b>1.25 ℃</b>	0.53 ℃	0.30 ℃	<b>0.21</b> ℃				
<b>200</b> ℃	<b>1.30 ℃</b>	<b>0.55</b> ℃	<b>0.31</b> ℃	<b>0.22</b> ℃				

## Set Up WIFI via T3000

Take an example of T3-BB here,connect WIFI via T3000

1.Visit https://temcocontrols.com/ftp/software/09T3000Software.zip, download T3000 software and install it;

2.Start T3000 software,click 🤦 to scan

T3000 Building Automation System Sep 24 2019 .	13	T- T- T- T- T-
File Tools View Database Control Miscellaneous He	dp	
1 0 C C = C C C	🖻 🖬 🤉 🚠 🖳 🏟 🔍 📗	
Default, Building     Local Natwork     T3-BB-WIFI     Serial Port     Virtual Device	Setting      Basic information     TCP/IP     Time Dyn     P Address     Ottom IP Address Automatically	dra Email User Logn Expansion 30 Device Serial Port Config R5485 Sur Wifi Setting
	W Use The Following IP Address         P Address :       192 . 168 . 0 . 3         Submet Mask       255 . 255 . 255 . 0         Cateway Address :       192 . 168 . 0 . 4         Modbus TCP Pert :       502         Over Configuration       Change IP         Click to do setting	Zighes :       Customer device ID and Key         SHAS Mai       SSD: 9666         USB Par       Use the following IP address         Zighes :       ID: 104.00.00.00.00.00.00.00.00.00.00.00.00.0
	GSM Configuration Clear Device Clear Subnet	t Database Rebot Device Done